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NEWS LETTER

BUREAU OF PLANT QUARANTINE

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(The contents of this number, unless specifically stated otherwise, cover the month of September only)

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Fruit fly in pomegranate.--A larva of the Mexican fruit fly (Anastrepha ludens Loew) was intercepted at Laredo, Tex., in a pomegranate in baggage from Mexico.

Weevil larva in avocado.--A larva of Heilipus sp. (Curculionidae) was intercepted at New Orleans in an avocado seed in ship's quarters from Honduras.

Asiatic beetle from Japan.--An adult of the Asiatic beetle (Anomala orientalis Waterh.) was intercepted at Seattle, Wash., in a box containing foodstuffs in baggage from Japan.

Interesting host record.--Bruchidius biguttatus (Olivier) (Bruchidae) was intercepted at Philadelphia in seed pods of Cistus villosus in the mail from Greece. J. C. Bridwell, of Washington, D. C., remarks as follows: "This record is particularly interesting since it is the first authentic record of any member of the family Cistaceae being affected by Bruchidae."

Bark beetle from Panama.--Adults of Xyleborus grenadensis Hopk. (Scolytidae) were intercepted at Norfolk, Va., in hardwood logs in cargo from Panama.

Wireworm in potato.--A larva of Selatosomus aeneus L. (Elateridae) was intercepted at New York in a potato in stores from Germany. A. G. Boving, of the Bureau of Entomology, states that this wireworm, which is not known to be established in America, is injurious to field crops in Europe.

Hemipteron on Crotalaria.--Mormidea angustata Stal (Pentatomidae) was collected on Crotalaria flower stalks in the field at Manati, P. R.

Weevil from Germany.--Apion fuscirostre Fab. (Curculionidae) was intercepted at Washington, D. C., in the seeds of Genista sp. in the mail from Germany.

Walnut logs infested.--Larvae of Saperda sp. (Cerambycidae) were intercepted at Norfolk, Va., in walnut logs in cargo from Australia.

Coleoptera arriving from India.--Heterobostrychus aequalis Waterh. (Bostrichidae), Minthea rugicollis Walker (Lyctidae), and Sinoxylon conigerum Gerst. (Bostrichidae) were intercepted at Philadelphia in wood used for cases of canned shelled nuts in cargo from India.

Peach and quince infested.--Larvae of Grapholitha sp. (Olethreutidae) were intercepted, one at Eagle Pass, Tex., in a quince in baggage from Mexico, and one at New York in a peach in baggage from France.

Scale insect from Brazil.--Aspidiotus tamarindi Green (Coccidae) was taken at Houston, Tex., on croton in stores from Brazil.

Homopteron on lettuce.--Empoasca decipiens Paoli (Cicadellidae) was intercepted at Boston on a lettuce leaf in stores from Italy.

Pink bollworm from India.--Pectinophora gossypiella Saund. was intercepted at San Francisco in cottonseed used for packing in the mail from India.

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Rust of sweet peas.--Sweet pea vines from Germany were intercepted at New York August 30 and found to be infected with Uromyces pisi, a rust not listed in U. S. Bul. 1366 as occurring on peas or sweet peas in this country. This is the first interception of the disease.

Nematode on Eryngium.--Some plants of Eryngium foetidum purchased for shipment to the mainland were found to be infested with nemas when examined by the inspector at San Juan September 7. The parasitid forms found were Aphelenchus avenae and Aphelenchoides bicaudatus. This is our first interception of the latter species, which is not very common and is usually found in small numbers if at all.

Leaf spot of Veronica.--Veronica sp. from Canada was found to be infected with Septoria sp., when inspected at Seattle September 14, our first interception of a Septoria on Veronica.

Pittosporum leaf spot.--Pittosporum sp. from Scotland was found to be infected with Septoria pittospori at New York September 8. This is our first interception of this disease, which does not appear to have been reported from this country.

Leaf spot of Vinca.--Our first interception of Septoria vincae was made August 29 at New York on Vinca sp. from Ireland.

Disease in banana leaves.--An interesting fungus on banana leaves from Mexico, intercepted at Philadelphia, was submitted to Miss E. K. Cash, who reports as follows: " ? Nectria foliicola B. & C. Spores not septate; if this species may divide later. Does not agree with any species of Hypocreaceae found, with one-celled spores and verrucose perithecia. If these spores are mature it would be a Notarisiella."

Aucuba disease.--Our first interception of Phomopsis aucubicola was made August 14 at Seattle on Aucuba japonica from Japan.

Clubroot on turnips.--We have had several interceptions of Plasmodiophora brassicae recently, our first one from Africa being found on turnips from South Africa at Philadelphia on September 16.

Pepper disease from Spain.--Our first interception of Oospora lactis parasitica from Spain was made at Mobile September 12 on bell peppers.

ANNUAL RECORD OF INTERCEPTED PLANT PESTS

The record of intercepted plant pests for the year ending June 30, 1933, has been completed. It shows a total of 17,232 interceptions, of which 9,553 are insects and 7,679 are diseases. These pests were obtained from 21,190 lots of material, some of which had no determinable pests and others had several. Last year's list showed 18,970 interceptions of pests from the 17,354 lots of material sent in.

HIDING THEM FROM THE INSPECTOR

The S.S. Colombia arrived at New York on September 11 with 120 passengers from Caribbean ports. Inspector C. G. Latham, who was assigned to the vessel, was summoned by a customs inspector to inspect some sour limes and avocados found in the baggage of one of the passengers, and during the examination he saw a shiny individual soap container accidentally come open. The soap was carefully wrapped in newspaper and was of such a peculiar shape that a closer examination was made. The "soap" proved to be a mango, and rigid examination of the baggage revealed two more specimens of the same fruit. Two fruit fly larvae were found in the lot.

A NOTE OF APPRECIATION

The excerpt below is from a letter dated September 14, 1933, and presents a phase of our inspection work not always given due recognition.

> The cactus plants under special permit *** have been received by me, and I thought that once in a blue moon a bouquet comes to you out of a flock of brickbats. And as I have good cause to thank you I should show my appreciation by saying something. The plants in this small shipment were so grateful for the drink of water, in the shape of wet moss, that although they were received by you, as stated *** quite dry and shriveled, they arrived here in a very satisfactory condition. I am sure that but for your kindness most of them would have been of but little use. Now I believe that all will grow, in fact one of them had a new leaf started on arrival.

BAGGAGE CARRIES PESTS

Another glimpse of the danger to which this country is subjected by the frequent presence of pests in the baggage of passengers from abroad is given by the record of examination of baggage from the S.S. Conte di Savoia, arriving from Italy at New York September 28. One disease and 14 insect interceptions were made in this case, most of which were from fruit (fig, peach, grape, quince, apple, pear, and walnut). The insects included several scales and several dipterous and lepidopterous larvae or pupae. The Mediterranean fruit fly was found infesting two lots of fruit.

INSPECTOR FINDS BOA CONSTRICTOR IN BANANAS

Recently an inspector at Baltimore while inspecting bananas from Guatemala found a young snake, a little over 2 feet long, in a bunch of bananas. It is reported that the snake, which somewhat resembled the dreaded water moccasin at first glance, was alive when found and needless to say caused consternation among the colored boys who were handling the fruit; in fact, the inspector had to kill the snake single handed. Dr. Doris M. Cochran, Assistant Curator of Reptiles, National Museum, reports as follows: "The snake is a young boa Constrictor emperator, a species which is found rather frequently in banana cargoes shipped from Central America."

Bananas have served in the past as a carrier for such animals as lizards, crabs, geckos, boas, snakes, hermit crabs, frogs, tree frogs, and a murine opossum, principally from Jamaica, Cuba, and Honduras.

Other collections from various hosts have included scorpions, pseudoscorpions, mongoose, ocellated lizard of Europe, giantwhip scorpion, amphipods, tarantulas, numerous spiders, centipedes, millipedes, mollusks, sow-bugs, and a flying fox.

This motley array of strange, interesting, and sometimes dangerous material has been turned over to specialists at the National Museum or elsewhere for study and preservation and constitutes one of the contributions of this Bureau to branches of science that at first blush would appear far removed from plant-quarantine work.

INSPECTION OF FOREIGN MAIL

Mail from foreign countries, particularly the parcel post, offers a ready medium accessible to all for the illegal entry of plants and plant products. Consequently, inspection of foreign mail to determine the presence of prohibited or restricted plant material is of utmost importance. Mail packages are received from points throughout the civilized world and are distributed to the most remote and obscure parts of the United States and, although postal, customs, and plant quarantine regulations have been promulgated to prevent the unauthorized entry of plant material through the mails, numerous packages containing plants, fruits, vegetables, etc., arrive in the mails, giving no outward indication of their contents; therefore, vigilant inspection by the plant quarantine inspectors is the principal safeguard against illegal entries.

All inspection of mail matter is necessarily cooperative with the Post Office Department and the Customs Service, the latter usually acting as an intermediary between the Post Office Department and the Bureau of Plant Quarantine.

The joint regulations, approved by the Secretary of the Treasury and the Postmaster General, provide a distribution scheme which designates the post offices to which mail matter of foreign origin shall be forwarded for customs examination, and also require that collectors of customs shall detail representatives for duty at such offices. The distribution scheme for mail from abroad is found in T.D. 39805. Mail from Canada and Mexico is inspected and disposed of at the border ports of arrival. Under this system, foreign mails either are examined at the port of arrival or dispatched unopened, and under seal, to a designated post office where customs inspection is made. Packages containing plant material are, in turn, submitted to the plant quarantine inspectors by the customs officials. If no plant quarantine service is maintained at the office concerned, the packages are forwarded to the nearest post office where plant quarantine inspectors are located.

It is obvious that effective plant quarantine inspection can be maintained only if the customs officials are familiar with the inspector's duties and are in sympathy with his work. Only close cooperation between the two services can give assurance that all packages of either known or doubtful status come to the attention of the quarantine inspectors.

When friendly relations and a helpful attitude have been thus established, full compliance with quarantines may be secured. Plant material once located may be disposed of, according to its status, by any of four authorized methods. It may be released; it may be directed to the Inspection House at Washington for further consideration; it may be returned to the sender; or it may be destroyed immediately.

A method that has proved satisfactory and that probably is in general use, is the reference to the quarantine inspectors of all packages containing any plant material. Such packages are examined by the customs inspectors and then turned over to the quarantine inspector who makes a thorough inspection and provides for proper disposition of all restricted or prohibited plant products.

All letters are scrutinized, and any that are bulky or otherwise of suspicious appearance are opened for examination. Quite frequently seeds and small bulbs are intercepted in this manner.

It is evident that the greater part of the plant material found in the mails is shipped in ignorance of plant quarantines and with no attempt at concealment or fraud, but occasionally packages are encountered that obviously have been prepared with care and ingenuity to deceive the inspectors and smuggle prohibited material into the country. The use of the "dummy" magazine package is an excellent example. A few plants are loosely rolled in a magazine; then plugs cut from a tightly rolled magazine of similar appearance are inserted in the open ends of the roll. A wrapper is then pasted around the completed package which gives it the exact appearance of a periodical prepared for mailing in the customary manner. Concealment of plant material in packages of miscellaneous household articles is frequently encountered. Apples have been found crowded into the toes of slippers, and pomegranates have been taken from the center of a bag of feathers. Occasionally a flower bulb will be found carefully wrapped in tissue paper, packed in a small box, and included with an assortment of trivial presents. No records have been compiled, but it is apparent that plant quarantines are violated by individuals much more frequently than by commercial firms.

The incidental use as packing material of prohibited products, such as cotton waste, raw cotton, rice hulls, etc., is very common, and important interceptions are frequently made by closely investigating mail packages of harmless appearance. Such material is very commonly used as protective packing for fragile merchandise that may be of considerable value. When valuable merchandise requires repacking, it is customary to notify the addressee and permit him to remove the objectionable packing.

The inclusion with merchandise of a few fruits, plants, or bulbs sent for purely sentimental reasons presents a broad and fertile field for careful search. The horticultural inclinations, as well as the dietary habits of the various nations, are demonstrated to a remarkable degree in the amount and variety of plant products customarily found in noncommercial mail packages. Packages from Italy and the Islands of the Mediterranean Sea quite commonly contain fig or grape cuttings, and edible products, such as olives, oranges, figs, cipollini, etc., while parcels from northern Europe more frequently contain decorative plants and flower bulbs.

Material intercepted in foreign mail offers an opportunity for the study of plants and plant material that might not come under observation through any other channel; thus, much may be learned regarding the distribution and characteristics of plant pests in remote places where no investigations have been made and, consequently, little is known regarding the native plant life. Careful inspection and, if necessary, laboratory study of unusual interceptions may bring to light some very important fact.

In ordinary procedure, every foreign mail package is opened for examination, but when the volume becomes abnormally great for a short period, as at Christmas, a certain amount of judgment is used in passing, unopened, packages believed to be of an unrestricted nature. Written declarations such as "cake", "candy", etc., are given due consideration but are not taken as conclusive, by any means. The odor, shape, feeling, weight, and general appearance are always considered. Diligent cooperative work by the plant quarantine inspectors and the customs officers should bring to light practically all plant material carried in the mails.

DOMESTIC PLANT QUARANTINES

DUTCH ELM DISEASE CONFERENCE

A conference on the Dutch elm disease is being held in Washington, D. C., on October 26, as the News Letter is being prepared. "It seems advisable", the notice states, "that shade tree commissions, foresters, State plant quarantine officers, and others interested be given an opportunity to discuss the status of the infection, the progress of suppressive activities, means of preventing the spread of the infection to other areas, and the prevention of its permanent establishment in the regions now involved. * * * At the conference representatives of the Bureau of Plant Industry will present information as to the distribution and economic importance of the disease, and members of the Bureau of Entomology staff will discuss the insect pests which are the only carriers thus far known. * * *"

"The disease apparently is being spread locally by a bark beetle known scientifically as Scolytus multistriatus. That beetle reached this country a considerable number of years ago and has been found thus far to be established over a general area extending from the vicinity of Philadelphia, Pa., to eastern Massachusetts," the notice continued.

POTATO WART CONFERENCE

A record of the proceedings of the potato wart conference held at Hazleton, Pa., on July 28, has been prepared for distribution "to make information on the new developments available to organizations of plant quarantine officers, plant pathologists, potato growers, and others interested in the general subject."

"The principal features brought out at the conference," according to the introductory note, "were: (1) That any hope of starving out the fungus in the soil by refraining from planting susceptible potatoes is becoming more and more remote; (2) that chemical disinfection of the soil is showing more promise of both efficiency and practicability, and (3) that those primarily concerned with work on the disease seem to feel that the best policy for the United States to pursue would be one looking toward total eradication from the country."

The conference was attended by representatives of the National Plant Board, the Eastern Plant Board, the States of Pennsylvania, New York, New Jersey, and Maryland, and the Federal Bureaus of Plant Industry and Plant Quarantine, the latter Bureau having called the conference. The proceedings are being distributed through the secretaries of the regional plant boards.

AFRICAN INSECT FOUND IN SENNA

An infestation of a considerable number of carloads of senna leaves which had been stored in a warehouse in a railway freight terminal at Hoboken, N. J., for 1-1/2 to 3 years, was reported recently by the railway company concerned. The insect, according to identifications by the Bureau of Entomology, appears to belong to the African genus Tortilia Chetcn., a member of the family Heliodinidae. It is new to the United States. Hundreds of moths and cocoons containing larvae and pupae were reported as found on and around the bales. About the time that the infestation was discovered, 60 bales from the same warehouse were delivered to a drug company in New York City. Special inspection of a number of these latter bales was made by port inspectors of the Bureau but they found that the deliveries consisted of Indian senna in compressed bales, and no signs of infestation were discovered. State officers are arranging for the fumigation of the rest of the senna in the warehouse, most of which is of African origin.

TRANSIT INSPECTION

Uncertified peaches constituted the principal product involved in violations of the Japanese beetle quarantine intercepted during the week ended September 15, on which date the certification requirements on fruits and vegetables were lifted for the season. Some 17 such shipments were found by one inspector at Boston during that week. The shipments were principally from that part of New England which, prior to this year, had not been affected by Federal quarantines relating to fruits amd vegetables.

PHONY PEACH DISEASE

The Bureau inspectors aiding the States in scouting for phony peach disease have completed this work in the environs of nurseries in Alabama, Georgia, Illinois, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

The State of Illinois has revoked the phony peach disease quarantine which applied to intrastate shipments from Jasper County. P. A. Glenn, Chief Plant Inspector, states that in Illinois they prefer to handle the problem without the use of quarantine measures. This plan is used by most of the other infected States.

The Arkansas Plant Board, on October 3, modified its rule "so as to eliminate special requirements on shipments of peach trees from phony-infected States." Satisfactory inspection and proper sanitary measures will be insured, however, the Board states, through special inquiry before shipping permits are issued to nurserymen in the infected States.

WHITE-PINE BLISTER RUST

The season's work on the inspection of nurseries growing 5-leafed pines under rust-free conditions has now been completed, and shipping permits have been issued for the present fiscal year for 22 premises in the infected States, of which 4 are operated by Federal or State governments, and 18 by private individuals or corporations. The latter are located in 10 different States in regions from Maine to Iowa and as far south as Virginia. Twelve applications for permit have been disapproved or withdrawn for the reason that blister rust infection was found or that Ribes were so prevalent as to endanger the pines, and three were tentatively approved where the pines have not yet reached a salable size.

The noncommercial permittees include the Idaho Forest School, Moscow, Idaho, and the U. S. Forest Service nurseries at Haugan, Mont., Rhinelander, Wis., and Parsons, W. Va. At Haugan, 6 million western white pines, Pinus monticola, are being grown for planting stock on certain areas on national forests in that vicinity. This nursery was established in 1909, and for the past 6 years the Forest Service and the Bureau of Plant Industry have carried on extensive eradication of wild Ribes growing principally along the stream bottoms.

Circular 40-T (confidential), giving a list of the pine-shipping permittees, has been sent to transit inspectors. State officers in the infected States have also been provided with the list for use in case information is desired as to sourdes where protected pines may be secured.

BLACK-STEM RUST

Twenty-one permits under the black-stem rust quarantine regulations have been issued authorizing nurserymen to ship barberry and Mahonia plants of resistant species and varieties to or between the 13 protected States in the Middle West. In addition, in the case of several large nurseries, the proprietors are gradually disposing of their susceptible varieties with the intention of arranging for permits for the resistant forms in future years. Nine of the permittees are located in Ohio, 3 in Illinois, 2 each in New Jersey and Pennsylvania, and 1 each in Colorado, Indiana, Kansas, Michigan, and Virginia.

JAPANESE BEETLE AND EUROPEAN CORN BORER

Exclusive Japanese Beetle Work

Trapping for population reduction at known infestations was somewhat extensively practiced this summer in a number of States included within the regulated territory. Eight hundred and seven State-owned traps set up under the supervision of Harry Horovitz, Superintendent of Field Work, Rhode Island Department of Agriculture, were operated in Pawtucket, Cranston, Newport, Westerly, East Providence, and four sections of Providence. These were in operation from July 1 to September 16. A total of 45,146 beetles was caught. Of these, 40,006 were caught in Providence. In Connecticut, State-owned traps were set up as follows: Middletown, 99; Manchester, 90; Winsted, 88; Putnam, 86. Catches in these cities were 4, 10, 0, and 133, respectively. A total of 814 traps, owned by the State of Delaware, was distributed at 17 points. During the season, 164,319 beetles were collected. After observations were made of the infestations along the Delaware coast line resulting from flotations of beetles from the densely infested sections of southern New Jersey, traps were placed at a number of important bay-front communities. These caught 4,222 beetles at Bayview Beach, 35,888 at Woodland Beach, and 15,844 at the Reedy Point Bridge. The heaviest infestation disclosed was one at Clayton yielding 65,464 beetles. Delaware traps were set on June 22 and were removed September 15. The trapping program at known infestations within the regulated sections of Maryland involved distribution of 6,200 traps in 38 communities. These caught 1,439,858 beetles. Of this total, 1,154,254 were caught at a heavy infestation in a rural section near Elkton, and 239,723 were captured at Colgate, a suburb of Baltimore. Operation of 601 traps in the District of Columbia for 12 weeks this summer resulted in the capture of 315,717 beetles. Trapping for control was also undertaken in eight Virginia towns and cities within the regulated area. Total catches of 39,205 were secured in 2,057 traps. Of these, 38,737 were caught at Alexandria. In Virginia and Maryland, Federal traps were used but the work was performed in cooperation with State officials. For the purpose of determining the degrees of infestation in 15 towns and around several lakes, all in the northern counties of New Jersey, 700 State-owned traps were set. New Jersey's annual suppression campaign continued this year with Edgar G. Rex, of the New Jersey Department of Agriculture, in charge. According to figures compiled by Mr. Rex, an area of approximately 200 square miles was trapped. Traps were not placed on each farm as previously had been done, but sections were selected in which a number of traps of large capacity could be used. In all, 150 farms were involved. There were 980 traps with beetle containers holding approximately 40 quarts, together with 300 of the standard sized traps used in this work. This year, heavy beetle emergence was from a week to 10 days earlier than in 1932. Ideal trapping weather prevailed from July 1 to 9, at which time beetles were emerging by the millions. The capture during this week was heavy. In many instances the 40-quart containers were filled to the top within 2 days. At one location, six of the large-sized traps caught 65 gallons of beetles on July 6, 7 and 8. From July 10 to 16 it was cool and unfavorable for trapping. Favorable trapping weather followed from July 17 to 25. From July 26 on, the balance of the trapping season was unsuitable for trap catches. High humidity and negligible wind led to very poor catches after the latter date. The season's catch in the South Jersey traps totaled 359,845,200, or 27,261 gallons of beetles. If placed in a single pile, this quantity of beetles would weigh 47.35 tons. One fortunate feature about the summer's work in New Jersey is that approximately one half of the beetles caught during the first week in July were female beetles which had not yet laid many eggs. Examination of a large number of females caught disclosed that they each contained on the average of 10 nearly mature eggs. Where traps were placed on the windward side of crops heavily infested with the insect, the infestation was substantially reduced and in some cases the crop was saved through the attractiveness of the traps in luring the pests away from the host plants. This was particularly true on small plantings of sweet corn.

Application of lead arsenate to the soil in and about the newly discovered infestation in Erie, Pa., was completed on September 26. These treatments began on August 18. During the 33 working days suitable for the spraying work a total of 50-1/4 acres was covered. This was the first time that such an extensive area has been poisoned at a rate of 1,000 pounds of lead arsenate per acre. Most of the sections sprayed were in the residential area, but some included open lots, factory areas, and yards with tall weeds. One was an open lot used for dumping. Thirteen men were used in the crews doing this work. Eighty seven thousand three hundred gallons of water were used in washington the lead arsenate spray into the ground. About 5 acres of home gardens were left untreated. These will be sprayed after the vegetable plants may be removed and the ground cleared. When foliage was being sprayed in these areas early this summer, light canvass tarpaulins each containing 300 square feet, were used to cover the home vegetable gardens in the sprayed areas. Thus covered there could be no later complaint of anyone getting poisoned from eating vegetables which might have received a negligible spotting of lead arsenate from the spray drift. Bait dispenser cages were also used throughout these sprayed areas to attract any beetles that might be present to the poisoned foliage. The 1,282 traps distributed in Erie were baited with both liquid and bran bait to doubly assure capture of any beetles in the neighborhood.

Climatic factors have been advanced as possibly responsible for the pronounced reduction in the number of Japanese beetles in the city of Philadelphia and in some sections of the previously densely infested zones in New Jersey. This marked reduction in beetle population coincides with a notable deficiency in rainfall in these sections during June and July 1932, when the eggs were hatching to produce the larvae to overwinter and form this year's supply of adults. Influence of precipitation on beetle survival is also indicated at a number of isolated points in nonregulated territory where traps have disclosed infestations for the past 2 years. In Cleveland, Ohio, where a 1932 infestation of 9 beetles failed to reappear this year, there was a notable deficiency in rainfall during July of last year. In Portland, Maine, however, where 11 beetles were found last year and 52 this year, there was a considerable excess of precipitation during July and August 1932, when the overwintering grubs were hatching. In Virginia, disappearance of four small isolated infestations and distinct decreases in four others coincided with unusually dry weather in the State during June and July 1932.

Speedy termination was had of a prosecution recently instituted for a violation of the Pennsylvania Japanese beetle quarantine. The violation involved the transportation of two trays of pepper plants from Pittsburgh, Pa., to Farrell, Pa., the latter a point in nonregulated territory. The violator, Frank Marks, of Farrell, was stopped at a road post manned by a Pennsylvania inspector at Leesburg. When advised of the quarantine, the owner of the plants informed the inspector that he would return to Pittsburgh for a certificate. Instead he returned but a short distance and then proceeded to his destination via a dirt road which detoured the guarded highways. The same inspector who made the interception later visited Mr. Marks' store and saw the same pepper plants on sale. It was admitted by the violator that the plants observed were those that were being transported when he was stopped at the road post. An information alleging the violation was filed by the Pennsylvania inspector before an alderman in Sharon, Pa., on September 9. The defendant at first pleaded "not guilty", but later changed his plea to "nolo contendere". On September 15 a fine of $25 and costs was imposed by the alderman.

Among the inspection center facilities provided this summer for inspection and certification of fruits and vegetables, probably the inspection platform in the Pittsburgh market district was the best adapted to our use. In searching about for an inspection platform in Pittsburgh, an abandoned poultry auction platform owned by the Pennsylvania Railroad was selected as a desirable site. This was secured at a very nominal rental. The frame structure is U-shaped, with ample platform space on the inside for 12 trucks. Entrance and exit lanes were marked on the cobblestone pavement. The platform is entirely covered, and a commodious office is located in the center. It is conveniently located to the market district and to the warehouses of a number of chain stores which require frequent inspection of considerable lots of fruits and vegetables. An early morning blaze of incendiary origin damaged one end of the platform while it was in use, but did not affect its usability.

Considerable excitement prevailed at the Philadelphia district quarantine office in the Frankford Arsenal grounds on September 7, when the powder distributing house was totally destroyed by fire. An adjoining building was also somewhat damaged. Although the Arsenal maintains its own fire department, it was necessary to call in the City Fire Department in order to confine the fire to the building ablaze. An investigating board decided that the fire was caused by spontaneous ignition of tracer sweepings which had been brought from the tracer loading shop and were awaiting destruction in the powder distributing house. It was also reported that the burning building contained TNT, but that the explosive was safely removed before it was reached by the flames.

Scouting of nursery and greenhouse premises heretofore uninfested was concluded in Pennsylvania, New Jersey, and the northern quarantined States early in

September. Extra automobile equipment used in this seasonal work was returned to the New Cumberland garage. As a result of this season's scouting, infestations were discovered in 70 property units. Nineteen of these were in Pennsylvania, 16 in New York, 15 in New Jersey, 12 in Maryland, 5 in Rhode Island, 2 in Virginia, and 1 in Massachusetts. There are now 2,438 regular plant shippers who comply with the requirements for maintaining a classified status. Five hundred and one of these are infested. This is a net increase of 32 infested classified establishments over the same date last year.

Observations in sections from which quarantined fruits and vegetables were being certified showed that adult beetle flight had, by the middle of September, subsided enough to justify removal of the restrictions on these two items. Accordingly, notice was promulgated by the Secretary lifting the seasonal restrictions on the movement of fruits and vegetables on and after September 15. As is customary, restrictions on the movement of cut flowers were allowed to remain in effect until October 15, the maximum date provided in the rules for regulating this commodity. Adult beetles are found infesting cut flowers long after beetles no longer can be found in fruits and vegetables. Last year the order removing the restrictions on the movement of fruits and vegetables was not effective until September 17.

Most of the infested sand pits in New Jersey were during September released from the fumigation requirements applicable during the flight of the adult beetle. During the period of the year in which the insect exists in the soil, sand shippers are required to remove 12 inches of surface soil before the sand to be certified may be dug. This requires the services of an inspector to supervise such removal. Many of the pit owners purposely withheld shipments until the disappearance of the adult beetle in order to avoid the necessity of fumigating the loaded sand with carbon disulphide. This resulted in immediate calls for a number of inspectors as soon as the summer requirements were lifted. Instructions for disinfections also provide that on September 20 nursery stock which has been growing for 2 years in soil satisfactorily treated with lead arsenate may be certified for movement from the regulated zone. Release of this stock required the stationing of inspectors at three large nurseries and the addition of a second man at another nursery starting shipments from lead-arsenate-treated plots.

Another collection of bait dispensing cages will be necessary in order to recover all of this equipment. Since approximately 4,000 of these were distributed in the cities where they were used, many of them were hung in trees and shrubs with considerable foliage. Distributed in this quantity it was impracticable to record in detail the exact location of each cage. Recently when it was desired to lift the cages, many of them were still obscured by the foliage and considerable separation of the limbs was required before they were disclosed. It was then decided to make another collection of the dispensers after the foliage has dropped and the limbs are bare. Little effort will then be required to gather all cages in sight.

Only two Japanese beetle quarantine certificates were required recently to certify 1,000,000 three-year-old Red Pine seedlings shipped from the State of Connecticut to Michigan for use in the reforestation program initiated by the Federal Government. The seedlings comprised two carloads. Since they originated in a nursery which had been shown by summer scouting to be free from Japanese beetle infestation, no actual inspection was required. These seedlings were grown under screens to prevent infestation by the European shoot moth. They were also individually inspected by Connecticut inspectors as an additional protection.

"Popular Science" for September contains a somewhat comprehensive and popularly written article on "War Waged on Insects with Lights and Odors", by Robert E. Martin. The Japanese beetle trap is prominently featured in the photographs illustrating the article. One picture depicts a ton of Japanese beetles caught in 500 special traps. Another shows a trap sectioned to illustrate its component parts. A third picture shows a trap in operation in a park. According to one of the picture titles, the trap "was developed by Department of Agriculture experts for use in the parks of Washington, D. C." Half a column is devoted to a description of the trap.

One luckless fisherman unwittingly brought the wrong kind of bait to the Japanese beetle road station located at Leesburg, Pa. When stopped at the station at 4:45 a.m. one morning recently, while en route from New Brighton, Pa., to Carlton, Pa., the fisherman was found to be carrying a can of earth containing 51 grubs. The earth and grubs were surrendered to the inspector and were later identified at the Harrisburg headquarters as Ochrosidia villosa. The inspector, of course, was not in position to make the determination.

Increased demands for supervision of fumigation of potting soil with carbon disulphide was facilitated by the use of the fumigant injector recently perfected by the treating division. In addition, kits have been constructed, each containing a thermometer, graduate cylinder, tools, and supplies necessary for soil fumigation. This kit has proved quite convenient, since it protects the thermometer and graduate, and also contains tools for making adjustments or minor repairs to the injector.

Restenciling of the stakes which mark plots of growing plants in classified establishments was completed by the treating division during the month. All stakes marking the boundaries of certified, lead-arsenate-treated plots are painted white, while all stakes at the limits of uncertified plots are painted yellow.

Final tabulation of the season's trapping results and compilation of other necessary data was in progress at the end of the month, in preparation for the conference to discuss 1933 developments in the Japanese beetle situation to be held in Washington on October 24. Coincident with the conference will be held a public hearing to consider the advisability of extending the Japanese beetle quarantine to the States of Maine and West Virginia.

At the request of officials of the Ninth National Shade Tree Conference, an exhibit showing Japanese beetle injury to various fruit, shade, and ornamental trees was prepared and sent to the conference, which was held at the New York Botanical Garden, Bronx Park, New York City, on September 7, 8 and 9. The exhibit consisted of Riker mounts, containing various specimens of foliage damage, mounted on two wall frames.

Plants certified from Class III, or infested nurseries during September increased almost 100 percent over the quantity certified from approximately the same number of concerns in the corresponding month of 1932. This year 1,338,583 plants were certified as against 704,262 certified last year. Nineteen cars of sand were fumigated with carbon disulphide during the month, as compared with 11 cars similarly fumigated during September of last year.

Removal of traps was accomplished during September in West Virginia, Virginia, Ohio, Michigan, Maine, Maryland, and the District of Columbia. Traps still remained in operation in a few localities in New Hampshire, New York, Vermont, and in Erie, Pa. The majority of the lifted traps were returned to the New Cumberland, Pa., warehouse during September.

Corn Borer Certification Activities

Some of the men temporarily removed from corn borer inspection and certification work and assigned to the supervision of Japanese beetle trapping as exchange work for corn borer inspections performed by the regular Japanese beetle personnel concluded their summer's trapping activities late in September and returned to corn borer certification. During the month, 174 shipments were certified for movement to States requiring Federal certification. Most of this material originated in Massachusetts and New Hampshire.

MEXICAN FRUIT FLY

The second hurricane of the season struck the Valley on the night of September 4, and with the exception of a slight lull about daylight when the center of the storm passed inland, raged unabated until the afternoon of the 5th. The anemometer at the Weather Bureau at Brownsville registered a wind velocity of 75 miles per hour before being blown away; unofficial estimates placed the velocity of the wind at Harlingen at between 100 and 125 miles per hour. The storm was accompanied by torrential rains, it being estimated that between 15 and 20 inches fell at Harlingen during the 24 hours. The storm sewers and natural drainage were totally unable to take care of this water, and streets in the towns of Cameron County were under water for several days.

Buildings began to collapse in Harlingen around 11 o'clock the night of the 4th, and by morning there was hardly a building in Cameron County that had not been demolished or that was not in need of major repairs. While the eastern half of the Valley bore the brunt of the storm, winds were strong enough as far west as Mission to unroof numerous houses and to wreck a number of warehouses and packing plants. Public utilities, with the exception of natural gas, went out early the night of the 4th. The only communications with the outside for a number of days were by rail and highway.

As soon as the winds began to subside, relief and rescue work was organized and rescue parties were sent out to bring the injured and sick in to emergency hospitals. The personnel and equipment of this project were turned over to this work and performed excellent service during the emergency. Remarkably few deaths resulted from the storm. Twenty-six persons were reported to have been killed and to have died from exposure in the Valley and in Matamoros. This small death list is doubly remarkable in that people were on the streets all night going to stronger buildings as their own houses went down. None of the inspectors of the Fruit Fly Project were injured and the Government equipment suffered only slight injury.

Next to the destruction of physical property, the citrus crop probably suffered the heaviest loss. Estimates after the storm placed the loss of fruit at around 90 percent of the crop, or approximately 10,000 carloads. This was a direct loss to the growers of around 4 or 5 million dollars. The packers and employees engaged in the various stages of handling the crop suffered proportionately through the loss of tonnage and employment. The shipping season opened on September 1, and a few carloads of Duncan fruit had been cut and placed in coloring rooms prior to the storm. An effort was made to salvage some of the wind-blown fruit from groves which had passed the maturity test, but this fruit broke down badly in the coloring rooms and in transit and the deal was not profitable. A quantity of this fruit was salvaged through the operation of juicing plants in Mission and McAllen. The juice from this fruit was exported to England and France.

Trees throughout the Valley were practically defoliated, and in many instances branches were blown off and some trees were entirely destroyed. A considerable number of trees were killed by standing water which was still in the groves at the end of the month. However, the trees made a phenomenal recovery and by the end of the month had put on an excellent growth of foliage.

PINK BOLLWORM

The most outstanding event during the month of September was the finding of specimens of the pink bollworm in southern Georgia and northern Florida. On September 18, two living larvae were found in gin trash at the Farmers' Gin Company at Enigma, in Berrien County, Ga. On September 22, one living larva was found in trash at the Brookfield Gin Company at Brookfield, in Tift County, Ga., which is not very far from Enigma. On the day this last specimen was found cotton from the Enigma territory was also being ginned at Brookfield, as the Enigma Gin was broken down; consequently, it is quite possible that all of the specimens came from the same general locality. On September 22 a dead larva was found in trash at the Madison Gin Company at Madison, in Madison County, Fla. Additional equipment and inspectors were immediately sent to this area, so that by the end of September 10 gin-trash machines were being operated. In addition, 16 Federal and State inspectors were making intensive field inspections to delimit the infestation. All fields within the immediate vicinity of the Brookfield and Enigma gins have now been inspected, without any further specimens being found. Inspections are also being made in Madison County, Fla., and in the immediate vicinity of the oil mills which receive seed from the suspicious territory. In view of the amount of work performed, it is evident that the infestation must be exceedingly light. Some of the gins have closed for the season and others have set ginning dates, but it is believed that the gin-trash machines can probably be operated until the latter part of October.

In the regulated area of northern Florida ginning went forward very rapidly during September. All of the gin trash was put through one of the small hand machines, with negative results. In addition, field inspections have also been made without finding any signs of the pink bollworm. By the end of the month over three fourths of the crop had been ginned, so that no great amount of gin trash will be available for inspection hereafter; however, it will still be possible to carry on field inspections for some time.

The daily collection and examination of cotton blooms from the plats at Chapman Field, Fla., continued to give negative results throughout September. In addition, the examination of hibiscus blooms was continued, but no specimens of the pink bollworm were found.

Gin-trash inspection was carried on in the Big Bend area of Texas throughout the month. The inspections show that there has been a gradual increase in the worm population; however, at the close of the month the infestation was considerably lighter than at the same time last season. The largest number of worms found from any single bale was 7,650. Immediately adjoining this field, and separated by only an irrigation ditch, is another field in which the infestation is very light. For some unknown reason the moths seemed to be attracted to the first field, and apparently they did not move on to other nearby fields. There are only two other fields in which any large number of worms have been taken from any single bale. Recently several prominent farmers in this area have reported that the field clean-up conducted last fall is showing results in the yield of cotton this season. One farmer expressed the belief that if the insect had been allowed to continue as it has done in the past, he would have made less than half a crop this season. These men are showing considerable interest over the possibility of fields being cleaned again this fall. In the upper end of the Big Bend the findings have been very light. In the lower end ginning has not yet started, as it is the practice to accumulate a supply of seed cotton before opening the gin. Information concerning the degree of infestation in this part of the Big Bend will be available for the next News Letter.

Several samples of trash have been inspected from the heavily infested part of Hudspeth County, Tex. The largest number of worms found in any of these samples was 18, which indicates that the infestation is considerably lighter than last season. Several samples were also examined in the Juarez Valley of Mexico with the findings about in the same proportion as the first findings of last season.

In the Salt River Valley of Arizona four gin-trash machines have been put into operation. There has been considerable trouble with pickers, some of them going on strike in various parts of this area. As a result, ginning has not yet reached the stage where all of the machines are able to operate to capacity. Thus far all of the first-cleaner trash from all gins in the area has been inspected, and the work has been so planned that the greater part of the best available trash can be inspected throughout the season. A small amount of field inspection has also been performed in the Salt River Valley, but no indications of the pink bollworm have been discovered by either method of inspection this season. Gin-trash inspection will probably begin in the remaining regulated areas during the coming month.

A steam pressure sterilizer for treating bales of cotton lint, in lieu of fumigation, has recently been developed by the Texas Department of Agriculture. The equipment, which consists of a pressure tube to hold one bale of cotton, and made of boiler plate, capable of standing a pressure of 25 pounds, and a 25 hp. upright boiler, was erected at Alpine, Tex., the latter part of August. The preliminary tests were run the first part of September. A representative of the State Department of Agriculture, and one each from the Technological Division and the Pink Bollworm Project, were designated to make the official tests. In each test 100 live pink bollworms were distributed in various parts of the bale 3 inches deep. In the first test the bale was given a 5-minute exposure in the tube under 15 pounds pressure, and in each succeeding test the exposure was reduced 1 minute, the last test being a 1-minute exposure. In all the tests all of the worms were killed. As it was too early in the season to secure double seed containing larvae in the resting stage, it was necessary to remove the kernel from the seed, place fresh larvae in them, and seal the seed up with glue. During the course of the tests it was suggested that this method might not be so effective in the case of seed in which the larvae had made their own entrance. Therefore, additional tests were run using lightly infested seed from the previous season which was obtained from the experimental laboratory. Of course, the number of worms in the seed was not known until after the tests were run and the seed had been examined. It is of special interest to note that the seed used in the 1-minute test contained the largest number of worms, and, as previously mentioned, there was no survival in any of the tests. Therefore, on September 22, the treating of commercial cotton was begun, and to date over 400 bales have been treated without any difficulties whatever being experienced. The cotton is being given an exposure of 3 minutes under 15 pounds steam pressure. Approximately 70 bales can be handled during an 8-hour day, including the treating and loading of the cotton, which is taken from the sterilizer and immediately loaded into the car. Daily temperatures are taken from various bales, and in no case has it been found less than 150° F., the average being much higher. This sterilization will kill any worms in the outer 3 inches of the bale. It was determined some years ago that compression will kill any worms in the bale except in the outer 3 inches. Therefore, after the bales are sterilized, they are immediately sent to a compression plant, after which they are free to move to any destination.

A road station was opened about 1-1/2 miles south of Marfa, Tex., at the junction of the Presidio and Ruidosa roads, on September 1. The station is manned by four inspectors and operates on a 24-hour basis. For the present this station is adequate to take care of the traffic moving from the infested section of the Big Bend. On September 29, 2 pick-sacks, containing about 1 pound of seed cotton, were intercepted. In this seed cotton 7 living pink-bollworm larvae were found. Early in October three additional interceptions of infested material were made, resulting in the finding of 3 living and 4 dead larvae. The owner of the material containing the 3 living larvae was en route to a cotton-growing section in west Texas outside the regulated area.

PREVENTING SPREAD OF MOTHS

Early in September work was started in selecting men for scouts from lists of unemployed secured through the National Reemployment Service in each of the States where Federal gypsy moth work is to be carried on. Only men residing in counties in which this work is to be done were selected. By the end of September, over 1,400 men had been employed for scouting work in New York, Vermont, Massachusetts, Connecticut, and Pennsylvania, and in addition, 115 men experienced in gypsy moth work, appointed to supervisory positions, had reported for duty. Because of the limited boarding accommodations it was not possible to employ all men at once, it being necessary to train one group of men at these schools and then transfer them to the field before a second group could be taken care of. These training schools are located where gypsy moth infestations are sufficiently heavy to give them necessary preliminary training within 10 days or 2 weeks. As soon as the men have been taught how to locate and creosote egg masses of the gypsy moth they are transferred to regular scouting work.

Although only a limited amount of work has been done in the towns selected for training schools, reports from the Vermont and Massachusetts towns where training is in progress indicate that the infestation there is somewhat heavier than was expected. While crews in training schools located west of the Connecticut River in Connecticut have not as yet discovered any large infestations, several of the infestations located to date in Vermont and Massachusetts cover a considerable amount of territory. These conditions are ideal for training men. By the end of the month practically all of the men in training in Vermont had been transferred to regular scouting and their places filled by the second quota to be accepted for work. By September 23, the full quota of 470 men had been enrolled in the Pennsylvania area, one half of these men coming from Luzerne County and one half from Lackawanna County. Part of this group were assigned to training schools in the generally infested area and are being transferred to duty elsewhere as soon as they have had sufficient preliminary training to do satisfactory work. The remainder of the men not in training schools were employed clearing brush and dead and worthless trees from the heavily infested area.

Regular scouting work was carried on in southwestern Massachusetts and northwestern Connecticut during the month.

Selectmen and mayors of towns and cities in Massachusetts in the area between the Connecticut River and the barrier zone have been interviewed to acquaint the proper town or city officials with the gypsy moth work that is to be done in this State with Federal funds, either by men employed with N.R.A. funds or the Emergency Conservation Work funds. This has been necessary in Massachusetts because of the State and local gypsy moth organization. Arrangements have been made whereby the Federal Government will cooperate with the local authorities in planning and carrying on this work, it being understood that the town or city will expend its usual appropriation for moth work. The local moth superintendent will examine the tree growth in the villages and along the highways, as well as the isolated trees, and will treat the infestations found. The Federal force working in Massachusetts will scout the woodland areas and creosote all egg clusters found, this work to be followed in the spring by spraying at the worst infestations. This will make possible more intensive work by the local moth superintendent by concentrating the available funds.

The summary of the gypsy moth defoliation survey shows that there was a large increase in the area defoliated in New England this year as compared with 1932. Below is given a comparison of the acreage defoliated in the New England States for the years 1932 and 1933.

STATE	ACREAGE OF DEFOLIATION, 1932	ACREAGE OF DEFOLIATION, 1933
Maine	42,297-1/2	19,718
New Hampshire	43,287	216,669
Vermont	1	2
Massachusetts	200,387	157,003
Rhode Island	376	4,292
Connecticut	46-1/2	46
Total,	286,395	397,730

There was a very heavy increase in the defoliation in New Hampshire in towns in the central section of the State extending north from Manchester to Concord and the Lake Winnipesaukee district. Although there was a considerable decrease in the total acreage defoliated in Maine as compared with last year, there were many more towns in the State where defoliation was found, and this was especially true of towns north and east of towns having defoliation in 1932. In Massachusetts, there was considerably less defoliation this season, but here also, there were more towns having defoliation extending toward the western part of the State. Defoliation was found as far west as Amherst, where 150 acres were defoliated, Amherst being only 20 miles air line from the nearest point in the barrier zone. Only one town showed defoliation in Vermont. Defoliation in Connecticut was about the same as last year. However, there was an area having heavy defoliation on Long Point, Groton, Conn., which presents a dangerous situation in regard to wind spread should weather conditions be favorable, as this infestation is less than 20 miles from Long Island. There was a very heavy increase in defoliation in Rhode Island as compared with 1932. During the latter part of the summer throughout the entire defoliated area in New England, an unusually heavy deposit of good-sized egg clusters was observed, and unless there is heavy mortality of eggs as a result of winter killing, the probability is that severe defoliation will occur next year.

In August a letter was received through the Public Works Administrator from a Scout Executive of the Boy Scouts of America, asking for information and possible help in the extermination of the gypsy moth at a Boy Scout camp located in New Hampshire. The letter stated that the trees in the vicinity of the camp were quite badly infested with egg clusters of the gypsy moth and that they would appreciate anything that could be done to assist them in eradicating the infestation. The executive was informed that it would not be possible for the Bureau to undertake local control work in that part of New Hampshire but that one of the district quarantine inspectors would do everything in his power to be as helpful as possible. This district inspector visited the scout executive at the camp a short time afterward and gave him information on the proper method of control. He also visited the New Hampshire official who is in charge of gypsy moth control for that State and arranged with him for the turning over of a large drum of creosote to the Boy

Scouts, to be used in treating egg clusters at the camp. This drum of creosote was delivered to the camp by the district inspector, who showed the executive and the scouts present how the egg clusters should be treated. A letter has been received from the executive thanking the organization for the cooperation which has been given in helping them to reduce the infestation of the gypsy moth at their camp. He stated that the scouts had already begun creosoting the egg clusters and that this work would be continued during week-ends and vacations until the infestation had been eradicated.

The inspection of wooden reels on which telephone cable is shipped forms a considerable part of the quarantine activity in a number of districts. Many hundreds of these reels are moved to points outside of the quarantined area each year. A majority of the firms that manufacture telephone cable are located outside of the quarantined area. Reels loaded with cable are shipped in to various points, usually close to the location where the cable is to be installed. In many cases the reels are unloaded immediately and returned to the cable company that owns them. In past years the cable company permitted these reels to be retained almost indefinitely, but changes in methods of business have taken place, probably because of the cost of such reels, and now the receivers are charged with them and do not receive abatements on these charges until the empty reels have been returned to the factory. This has resulted in the reels being shipped back as soon as possible, and for this reason there is less chance of their becoming infested than in the past. Oftentimes the amount of cable used on a particular installation does not exhaust the entire reel, and companies making such installations have had numerous reels stored on which small pieces of cable were kept until a use was found for them. This held reels in storage yards for considerable lengths of time and of course the holding company was unable to obtain rebates until they were returned to the owners. One large company located near Boston has purchased a supply of reels for its own use, on which short sections of cable are wound for storage, so that the reels belonging to the cable company may be returned immediately.

The shipment of pulpwood from the more northern sections of the quarantined area has not been particularly active during the last few years as, in common with numerous other materials, there have not been extensive purchases of this commodity. Reports have been received recently which would indicate that there are signs of renewed activity in this type of business and that probably there will be more cars of pulpwood inspected and shipped this coming season than during the seasons of the past few years. Because of the fact that some pulpwood cut in the past has not found a ready market it has been stored in piles wherever convenient. These piles may have been left undisturbed for several years, and it is quite possible that with renewed activity in this industry such stored pulpwood, some of which may be found to be infested, will be shipped. Because of competition it is desirable that pulpwood dealers fill orders at a moment's notice. Recognizing this fact several of the dealers in one of the quarantined districts keep freight cars loaded with pulpwood on side tracks ready to move immediately upon receipt of orders. Such loaded cars are sometimes held on sidings for several weeks and when ordered may be moved to any part of the country. As the wood is free from infestation when loaded on the cars it becomes necessary to see that there is no tree growth in the vicinity of the sidings, to avoid the possibility of infestation getting on the loaded cars. The cars, of course, are not certified until they are actually ready to move.

Recently a rather unusual shipment was sent from one of the large nurseries in the eastern part of the quarantined area. This nursery imported last year several tons of limestone from Scotland to be used in constructing a rock garden at the annual flower show held last winter at the Mechanics Building in Boston. After the flower show was over the stone was trucked to the nursery and dumped in the vicinity of the packing shed. The pieces of stone were rather large, averaging about 300 pounds each. The entire consignment was sold for the construction of an English rock garden in New York. Although there were no particular signs of infestation in the vicinity of the place where the rock garden had been piled at the nursery, it was necessary to inspect the pieces quite carefully, as each was full of holes, which would have been ideal places for gypsy moth females to deposit their egg clusters in.

During the course of the investigations into the amount of injury caused to cranberry bogs by gypsy moth larvae, the quarantine inspector who made the investigation obtained information during the summer that a considerable amount of damage had been done to strawberry plantings by such larvae. According to the information supplied to him by the Massachusetts County Extension Agent for Barnstable County, there were about 500 acres of strawberry plants set out in the town of Falmouth last spring. Many of the plantings were in the vicinity of heavy gypsy moth infestations and in numerous cases the larvae migrated from these infestations to the strawberry plantings where they caused a very large amount of injury. It was reported that damage was caused to about 250 acres. Of this area, about 125 acres were completely defoliated and the remaining 125 more or less severely injured. Of those plants completely defoliated it is possible that the majority will die, and many of the others not completely defoliated were so severely injured that it is questionable if they will produce a satisfactory yield in 1934.

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